

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA17 | Offchurch and Cubbington
Baseline (SV-002-017)
Sound, noise and vibration

November 2013

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Department for Transport

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Appendix SV-002-017

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Baseline	002
Community forum area:	Offchurch and Cubbington	017

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1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas.
- 1.1.2 For the Offchurch and Cubbington area (CFA17), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-017) (this appendix);
 - construction sound, noise and vibration (Appendix SV-003-017); and
 - operational sound, noise and vibration (Appendix SV-004-017).
- 1.1.3 Maps referred to within this appendix are contained in the Volume 5 map book.
- 1.1.4 This appendix includes details of the existing and future baseline sound environment within the area. It provides details of measurements and any other data collection which has been undertaken in order to obtain existing and future baseline sound levels.

1.2 Existing acoustic environment

- 1.2.1 The study area is predominantly rural, containing a number of small communities, isolated residences and farms. Agriculture is the principal land use with both livestock and arable farms throughout. The significant sound sources which traverse the study area are the B4455 Fosse Way in the south and the B4453 Rugby Road in the north which provide connections between Leamington Spa and the urban areas of Coventry and Rugby. Welsh Road is the main north-south route through the study area, connecting Southam to Cubbington via Offchurch. Away from these main roads, the sound climate is one of local road traffic, agricultural activities, and natural sound sources (e.g. tree rustle, bird song).
- 1.2.2 The village of Cubbington, in the north of the study area, is the largest settlement and extends to within 500m of the Proposed Scheme. Within the village baseline sound sources are mixed. In the inner residential area, the noise climate is characterised by transportation noise sources, both distant from B4453 Rugby Road and Coventry Road and local road traffic noise, as well as the occasional passage of aircraft overhead. Close to the B4453 Rugby Road, road traffic noise dominates the soundscape during both day (59dB¹) and night-time periods (47dB²), while at properties located on the eastern edge of the village, facing onto Church Lane, New Street and Mill Lane, noise levels are dominated by natural sound sources (e.g. tree rustle and bird song) with only sporadic local road traffic noise (daytime sound levels are typically 50dB to 55dB). During the night-time the same sources generally contribute, with night-time sound levels dropping significantly (40dB to 45dB). At the rear facade of properties located on the south eastern edge of Cubbington, adjacent

¹ Quoted dB values at residential areas refer to the equivalent continuous sound level, $L_{pAeq,16hr}$.

² The equivalent continuous sound level, $L_{pAeq,8hr}$.

to the agricultural farmland, existing baseline noise levels are subjectively low (substantially lower than 50dB daytime and/or 40dB night-time). The acoustic environment being characterised by little or no appreciable man-made sound, this is therefore considered to be a unique feature of the existing sound environment.

- 1.2.3 The village of Offchurch is located in a rural area north of the B4455 Fosse Way and Welsh Road which passes through the village. Close to these main transportation routes, road traffic noise is the dominant sound source and noise levels are constant during both day (typically 50dB to 55dB³) and night-time periods (typically 45dB to 50dB⁴). In areas away from the main roads, the soundscape is characterised by natural sound sources (e.g. tree rustle, bird song and livestock) and sporadic aircraft noise.
- 1.2.4 In the agricultural areas between Offchurch and the southern limits of the study area, ambient noise levels during daytime periods are dominated by natural sound sources, with contributions from distant road traffic noise from the B4455 Fosse Way (typically 45dB to 50dB). In the agricultural area between Cubbington and Offchurch and away from main roads, the sound climate is characterised by little or no appreciable man-made noise sources. Ambient noise levels are relatively low during both day time (40dB to 45dB) and night time periods (35dB to 40dB) and this is considered to be a unique feature of the acoustic environment.

³ 16-hour daytime (07:00 to 23:00) equivalent continuous sound pressure level, $L_{pAeq,16hr}$.

⁴ 8-hour night-time (23:00 to 07:00) equivalent continuous sound pressure level, $L_{pAeq,8hr}$.

2 Scope, assumptions and limitations

2.1 Sound and vibration sensitive receptors

2.1.1 Within the Offchurch and Cubbington area, 72 assessment locations have been defined to represent all sound and vibration sensitive receptors within the spatial scope. The assessment locations are shown on the detailed maps in Map Series SV-03 and SV-04 (Volume 5 CFA17 map book). Within this area, the following types of sound and vibration sensitive receptors have been identified:

- residential areas;
- education facilities;
- community centres and meeting facilities;
- places of worship; and
- healthcare facilities.

2.2 Local engagement

2.2.1 Meetings have been held with representatives of Warwick District Council regarding the approach which has been taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors and the selection of assessment locations.

2.2.2 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and reported in this appendix.

2.2.3 Representatives of Warwick District Council have also attended baseline sound measurements in this area and witnessed the measurement procedures used.

2.2.4 Local engagement through community forum meetings has also provided the opportunity for local groups to suggest appropriate baseline sound monitoring locations. Any suggestions received from these groups have been considered and influenced the monitoring undertaken and reported in this document.

2.3 Existing baseline sound monitoring locations

2.3.1 Baseline monitoring locations have been defined in order to provide representative sound levels at each assessment location within the study area.

2.3.2 Baseline information has been gathered incrementally through successive rounds of field surveys focused on locations where likely significant effects are forecast.

2.3.3 Areas within the study area where baseline data is required have been broken down into a series of smaller sub-areas. Each of these is representative of clusters of receptors where the noise climate is influenced by the same sound sources. Within each of the sub-areas, a programme of unattended monitoring has been undertaken, supplemented by attended measurements to ensure good coverage at all the identified sound assessment locations. All attended measurements have been undertaken simultaneously with the unattended measurements to allow a direct comparison between assessment locations to be established.

- 2.3.4 After each successive round of field surveys, the collected data has been analysed, and based upon feedback from on-going stakeholder dialogue, the measurement locations refined for subsequent rounds.
- 2.3.5 Maps showing the baseline sound monitoring locations and assessment locations with this area are included in Map Series SV-03 and Sv-04(Volume 5 CFA17 map book).

3 Environmental baseline

3.1 Existing baseline data collection methodology

- 3.1.1 The overall approach to baseline data collection for sound noise and vibration is described in Appendix SV-001-000.
- 3.1.2 Over the Offchurch and Cubbington area, a number of baseline sound measurements have been undertaken. These have been classified as follows:
- seven long-term measurements – unattended measurements of several days duration; and
 - twenty short-term measurements – attended measurements typically of 30 minutes duration (generally repeated at different times of day).
- 3.1.3 In Cubbington, seven-day unattended baseline sound monitoring has been undertaken with further satellite short-term measurements at a number of locations throughout the village. Long-term measurements were undertaken at two noise sensitive receptors to the north east of the village, on either side of the B4453 Rugby Road. Satellite measurements have been carried out along the eastern edge of the conurbation, namely on Coventry Road, Pinehurst and Mill Lane, as well as in the more central residential areas, namely on Broadway, Church Hill, High Street and Price Road. Further short-term measurements have been undertaken north of Cubbington at a number of locations representative of the noise sensitive receptors near the main transportation noise sources (Coventry Road, B4453 Rugby Road and the A445 Leicester Lane). All satellite measurements were undertaken simultaneously with the longer duration monitoring to allow good correlation between the two locations, with each site being visited several times, during both the day and night-time periods.
- 3.1.4 In Offchurch, away from the main noise source, namely Welsh Road which passes through the village, the soundscape is dominated by natural sound sources. A long-term noise monitoring position was set up on farmland off Welsh Road, while simultaneous short-term measurements were undertaken during both the day and night-time periods at a number of noise sensitive locations within the village, namely Welsh Road, School Hill and Village Hill.
- 3.1.5 To investigate the noise climate in the more rural areas in the vicinity of Offchurch, measurements were carried out at a number of isolated noise sensitive receptors. Long-term noise monitoring was undertaken at two locations on farmland between Offchurch and Hunningham, while simultaneous satellite measurements were undertaken at rural properties representative of noise sensitive receptors on Stonebridge Lane and on the single track lane connecting Offchurch and Hunningham. Additional day and night-time short-term measurements were located near the main roads in the area, on Fosse Way and at the junction of Offchurch Lane and Welsh Road, where the soundscape is characterised by road traffic noise with contributions from natural noise sources (e.g. tree rustle, and bird song).
- 3.1.6 In the southern part of the study area, the noise climate is dominated by road traffic noise due to the presence of main transportation routes in the area, such as the B4455

Fosse Way and Leamington Road. Long-term measurements were taken at a residential noise sensitive receptor along Fosse Way, while simultaneous satellite measurements were carried out at two additional noise sensitive locations along Leamington Road in Snowford Hill and Fosse Way.

3.2 Existing baseline sound levels

3.2.1 From the measurements described in Section 3.1, baseline sound levels have been ascertained for each assessment location within this area. These levels are presented in terms of the following key sound indicators:

- Baseline levels used for the operational sound assessment:
 - $L_{pAeq,16hr\text{ weekday}}$ daytime (07:00-23:00) sound pressure level;
 - $L_{pAeq,8hr\text{ weekday}}$ night-time (23:00-07:00) sound pressure level;
 - arithmetic average of $L_{pAFmax,5min}$ night-time sound pressure level; and
 - highest $L_{pAFmax,5min}$ night-time sound pressure level.
- Baseline levels used for the construction sound assessment:
 - Daytime L_{pAeq} sound pressure level (Monday to Friday 07:00-19:00; Saturday 07:00-13:00);
 - Evening/weekend L_{pAeq} sound pressure level (Monday to Friday 19:00-23:00; Saturday 13:00-23:00; Sunday 07:00 to 23:00); and
 - Night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00-07:00).

3.2.2 These values are presented in Table 1. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Appendix SV-001-000.

Table 1: Existing baseline sound levels

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
212346	Leicester Lane, Leamington Spa	CN183S	50.5	50.0	64.6	69.0	52.0	48.1	49.8	2,BC,ii,c
213140	Cross Lane, Cubbington, Leamington Spa	CN187S	54.9	45.3	42.9	54.0	64.7	52.5	46.3	2,BC,ii,c
213190	Coventry Road, Cubbington, Leamington Spa	CN058S	57.9	53.2	64.0	79.0	58.7	55.6	54.6	2,C,i,c
213309	Rugby Road, Cubbington, Leamington Spa	CN184S	58.4	57.9	67.6	72.0	68.6	56.5	58.8	2,BC,ii,c
213416	Rugby Road, Cubbington, Leamington Spa	CN184S	64.4	63.9	68.6	73.0	74.6	62.5	64.8	2,C,i,c
213490	Pinehurst, Cubbington, Leamington Spa	CN028L	58.8	46.7	54.5	74.2	59.6	56.5	48.0	1,C,i,c
213631	Rugby Road, Cubbington, Leamington Spa	CN028L	58.8	46.7	54.5	74.2	59.6	56.5	48.0	1,C,i,c
213706	Cotton Mill Spinney, Cubbington, Leamington Spa	CN071L	53.7	50.7	57.2	79.8	55.1	51.9	51.1	1,C,ii,b
213764	Thorn Stile Close, Cubbington, Leamington Spa	CN071L	45.7	42.7	54.2	76.8	47.1	43.9	43.1	1,BC,ii,b
213855	Three Cornered Close, Cubbington, Leamington Spa	CN058S	57.9	48.2	59.0	74.0	58.7	55.6	49.6	2,C,i,c
213956	Cotton Mill Spinney, Cubbington, Leamington Spa	CN058S	49.9	40.2	54.0	69.0	50.7	47.6	41.6	2,BC,ii,c
214082	Church Lane, Cubbington, Leamington Spa	CN028L	58.8	46.7	54.5	74.2	59.6	56.5	48.0	1,C,i,c
214129	New Street, Cubbington, Leamington Spa	CN112S	47.6	40.8	51.4	59.2	48.3	49.0	41.8	2,A,ii,c
214169	Cubbington, Leamington Spa	CN112S	36.6	32.8	43.4	51.2	37.3	38.0	33.8	2,BC,ii,c
214212	Cubbington, Leamington Spa	CN112S	44.6	37.8	48.4	56.2	45.3	46.0	38.8	2,A,i,c
214243	Cubbington, Leamington Spa	CN112S	44.6	37.8	48.4	56.2	45.3	46.0	38.8	2,A,i,c

⁵ Table 2 provides a data source coding key.

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Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
214280	Cross Lane, Cubbington, Leamington Spa	CN187S	50.9	41.3	40.9	52.0	60.7	48.5	42.3	2,A,i,c
214747	Hillcrest, Leamington Spa	CN059S	61.0	47.2	67.5	69.5	62.8	57.7	48.2	2,A,i,b
214812	High Street, Cubbington, Leamington Spa	CN059S	61.0	47.2	67.5	69.5	62.8	57.7	48.2	2,A,i,b
215041	Ladycroft, Leamington Spa	CN059S	61.0	47.2	67.5	69.5	62.8	57.7	48.2	2,A,i,b
215309	New Street, Cubbington, Leamington Spa	CN112S	47.6	40.8	51.4	59.2	48.3	49.0	41.8	2,A,i,c
215365	Knightley Close, Leamington Spa	CN059S	56.0	42.2	62.5	64.5	57.8	52.7	43.2	2,C,ii,b
215404	Price Road, Leamington Spa	CN187S	50.9	41.3	40.9	52.0	60.7	48.5	42.3	2,A,i,c
215612	Broadway, Leamington Spa	CN184S	59.4	58.9	63.6	68.0	62.8	57.5	59.8	2,C,i,c
215919	Broadway, Leamington Spa	CN185S	54.8	44.6	47.5	54.0	64.6	52.5	45.6	2,A,i,c
215976	Broadway, Leamington Spa	CN059S	56.0	42.2	62.5	64.5	57.8	52.7	43.2	2,C,ii,b
216179	Pinehurst, Cubbington, Leamington Spa	CN111S	50.1	40.4	46.8	54.9	50.7	51.5	41.4	2,C,i,c
216265	Church Hill, Cubbington, Leamington Spa	CN186S	53.2	35.7	35.9	47.0	54.6	51.4	36.1	2,C,i,c
216343	Austen Court, Cubbington, Leamington Spa	CN111S	42.6	35.4	41.8	49.9	43.2	44.0	36.4	2,C,ii,c
216416	Church Hill, Cubbington, Leamington Spa	CN186S	45.2	27.7	30.9	42.0	46.6	43.4	28.1	2,BC,ii,c
216506	New Street, Cubbington, Leamington Spa	CN186S	58.2	40.7	37.9	49.0	59.6	56.4	41.1	2,C,i,c
216690	Coventry Road, Cubbington, Leamington Spa	CN057S	57.9	45.0	55.6	70.6	59.7	54.7	46.1	2,C,ii,c
231349	Welsh Road, Offchurch, Leamington Spa	CN063S	45.5	28.2	35.2	39.3	46.9	43.3	29.0	2,C,ii,b
231757	Fosse Way, Offchurch, Leamington Spa	CN061S	53.6	53.4	60.4	71.4	55.5	56.3	28.0	2,C,ii,c
232415	Welsh Road, Offchurch, Leamington Spa	CN063S	53.5	36.2	43.2	47.3	54.9	51.3	45.7	2,C,ii,b

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
232441	Welsh Road, Offchurch, Leamington Spa	CN063S	53.5	36.2	43.2	47.3	54.9	51.3	45.7	2,C,ii,c
233947	School Hill, Offchurch, Leamington Spa	CN189S	54.5	51.7	63.3	76.0	56.4	52.1	34.1	2,C,ii,c
233982	School Hill, Offchurch, Leamington Spa	CN189S	54.5	51.7	63.3	76.0	56.4	52.1	31.9	2,C,i,c
234209	Village Street, Offchurch, Leamington Spa	CN190S	47.3	38.7	46.9	58.0	49.2	44.8	31.9	2,BC,ii,c
234251	Welsh Road, Offchurch, Leamington Spa	CN072L	50.1	42.1	54.2	74.0	52.0	47.7	34.9	1,BC,ii,b
234310	Welsh Road, Offchurch, Leamington Spa	CN072L	50.1	42.1	54.2	74.0	52.0	47.7	51.1	1,BC,ii,b
234354	Welsh Road, Cubbington, Leamington Spa	CN188S	61.9	45.0	61.1	81.0	63.8	59.5	33.9	2,B,i,c
234364	Welsh Road, Cubbington, Leamington Spa	CN060S	55.2	53.9	72.0	75.8	56.0	56.3	26.9	2,C,ii,c
234390	Welsh Road, Cubbington, Leamington Spa	CN188S	64.9	48.0	61.1	81.0	66.8	62.5	54.5	2,A,i,c
234433	Mill Lane, Cubbington, Leamington Spa	CN044L	43.7	33.9	41.1	61.6	44.4	42.3	54.5	1,A,i,c
234521	Rugby Road, Weston Under Wetherley, Leamington Spa	CN028L	43.8	31.7	39.5	59.2	44.6	41.5	44.5	1,C,ii,c
234564	Rugby Road, Cubbington, Leamington Spa	CN028L	58.8	46.7	54.5	74.2	59.6	56.5	44.5	1,C,i,c
234577	Rugby Road, Weston Under Wetherley, Leamington Spa	CN028L	48.8	36.7	44.5	64.2	49.6	46.5	34.5	1,C,ii,c
234674	Rugby Road, Weston Under Wetherley, Leamington Spa	CN028L	53.8	41.7	49.5	69.2	54.6	51.5	48.0	1,A,ii,c
234681	Rugby Road, Cubbington, Leamington Spa	CN028L	63.8	51.7	59.5	79.2	64.6	61.5	52.0	1,C,i,c
234744	Welsh Road, Offchurch, Leamington Spa	CN072L	50.1	42.1	54.2	74.0	52.0	47.7	59.2	1,BC,i,b
234760	Welsh Road, Offchurch, Leamington Spa	CN072L	58.1	50.1	59.2	79.0	60.0	55.7	67.2	1,C,i,b

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Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
234851	Village Street, Offchurch, Leamington Spa	CN190S	59.3	50.7	57.9	69.0	61.2	56.8	68.2	2,C,ii,c
234863	Long Itchington Road, Offchurch, Leamington Spa	CN062S	56.4	51.0	55.2	60.6	57.1	55.0	61.2	2,A,i,c
234899	Long Itchington Road, Offchurch, Leamington Spa	CN062S	51.4	46.0	50.2	55.6	52.1	50.0	38.0	2,C,ii,c
234937	Long Itchington Road, Offchurch, Leamington Spa	CN062S	51.4	46.0	50.2	55.6	52.1	50.0	33.6	2,C,ii,c
235066	Hunningham Road, Offchurch, Leamington spa	CN044L	48.7	33.9	41.1	61.6	49.4	47.3	38.6	1,C,i,c

235115	Hunningham Road, Offchurch, Leamington Spa	CN029L	50.4	38.7	43.0	77.4	51.2	51.5	43.1	1,A,i,c
235121	Hunningham Road, Offchurch, Leamington Spa	CN113S	45.7	36.4	43.5	45.7	46.4	44.3	56.3	2,C,ii,c
235139	Hunningham Road, Offchurch, Leamington Spa	CN029L	50.4	38.7	43.0	77.4	51.2	51.5	43.1	1,A,i,c
235157	Hunningham Road, Offchurch, Leamington Spa	CN113S	40.7	31.4	38.5	40.7	41.4	39.3	29.3	2,C,ii,c
235796	Welsh Road, Offchurch, Leamington Spa	CN063S	65.5	43.2	50.2	54.3	66.9	63.3	43.1	2,C,i,b
235805	Fosse Way, Offchurch, Leamington Spa	CN192S	66.0	65.1	66.9	84.0	66.8	62.3	34.3	2,C,i,c
235834	Long Itchington Road, Offchurch, Leamington Spa	CN191S	52.9	35.2	32.2	42.0	53.4	49.0	35.5	2,C,ii,c
235841	Long Itchington Road, Offchurch, Leamington Spa	CN191S	64.9	47.2	41.2	51.0	65.4	61.0	47.5	2,C,i,c
236006	Fosse Way, Offchurch, Leamington Spa	CN073L	56.5	50.9	61.5	80.6	57.3	52.9	33.6	1,BC,ii,b
700636	Thorn Stile Close, Cubbington, Leamington Spa	CN071L	43.7	40.7	50.2	72.8	45.1	41.9	41.1	1,B,ii,b
701072	Leicester Lane, Cubbington	CN027L	64.8	56.4	72.4	87.1	65.5	62.0	56.6	1,C,ii,b
701073	Hunningham Road, Offchurch, Leamington Spa	CN113S	45.7	33.9	38.5	40.7	46.4	44.3	53.8	2,C,ii,c
700653	School Hill, Offchurch, Leamington Spa	CN189S	52.5	49.7	61.3	74.0	54.4	50.1	32.1	2,C,i,c
701074	Fosse Way, Offchurch, Leamington Spa	CN192S	71.0	65.1	66.9	84.0	71.8	67.3	34.3	2,A,i,c
721018	Rugby Road, Cubbington, Leamington Spa	CN028L	58.8	46.7	54.5	74.2	59.6	56.5	44.5	1,C,i,c
901033	Bascote, Southam	CN064S	43.7	31.9	42.3	59.2	45.1	41.5	32.7	2,C,ii,b
901034	Bascote, Southam	CN064S	43.7	31.9	42.3	59.2	45.1	41.5	32.7	2,C,ii,b
901036	Bascote, Southam	CN063S	40.5	43.2	50.2	54.3	41.9	38.3	44.0	2,C,ii,b

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location
2	Short-term (linked to simultaneous long-term)
3	Short-term (using profile from non-simultaneous long-term)
4	Short-term using standard (National Noise Incidence Study ⁶ or other) 24hr profile
5	Specific validated prediction
6	Predictions from other sources (Defra noise maps ⁷ , etc.).
7	Generic levels
Code	Corrections applied
A	Data from above source applied directly
B	Correction applied for screening
C	Correction applied for distance from source
D	Minimum level cut-off applied.
Code	Distance from measurement
i	Data applied from a measurement at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.
Code	Uncertainty
a	Data are considered highly representative of the prevailing sound climate
b	Data are considered representative of the prevailing sound climate, but variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate, (e.g. taken from Defra noise maps, etc.).

3.3 Future baseline methodology

Construction

- 3.3.1 The assessment of noise from construction activities assumes a baseline year of 2017. As a conservative assumption it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017.
- 3.3.2 Due to the duration of the construction work and as the precise timing of the highest sound levels would be different in each location, using baseline sound levels for 2017 as the start of the construction period, provides a reasonable worst case assessment.

⁶ Building Research Establishment (2002), *National Noise Incidence Study, 2000/2001*.

⁷ Defra, Noise Mapping England, <http://services.defra.gov.uk/wps/portal/noise/>; accessed 26 July 2013.

- 3.3.3 The assessment of construction traffic is based on future baseline traffic flows for 2021, as a year representative of the middle of the construction period.

Operation

- 3.3.4 Changes in existing sound sources between 2012/2013 and 2026 may result in changes to baseline sound levels.
- 3.3.5 For major transportation sources, data for existing and future baseline operations have been reviewed. Where changes may occur between the existing baseline and future baseline (2026) situations, expected changes in baseline sound level have been derived. For example, expected changes in traffic flow, composition and speed have been used to calculate changes in sound emission from roads using the methodology from the Calculation of Road Traffic Noise⁸.
- 3.3.6 The changes to major sound sources which have been identified in this area are summarised in Table 3.

Table 3: 2026 future baseline changes in sound sources

Sound Source affected	Cause of change in levels	Change in sound levels (existing baseline to 2026 future baseline) (dB)	
		Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$
Welsh Road in the vicinity of Bascote	Increased traffic flow	1.0	0.3
Welsh Road throughout Offchurch	Increased traffic flow	0.8	0.3
B4455 Fosse Way in the vicinity of Hunningham	Increased traffic flow	0.7	0.3
Road (U/C) Between The Junction With Welsh Road In Offchurch And Hunningham	Increased traffic flow	0.7	0.3
B4453 Rugby Road in the vicinity of Cubbington and Weston under Wetherley	Increased traffic flow	0.9	0.3
Coventry Road in the vicinity of Cubbington	Increased traffic flow	1.0	0.3
A425 in the vicinity of Ufton	Increased traffic flow	0.8	0.5
Fosse Way in the vicinity of Offchurch	Increased traffic flow	0.7	0.3
Kenilworth Road in the vicinity of Cubbington	Increased traffic flow	0.7	0.3
A445 Leicester Lane in the vicinity of Cubbington	Increased traffic flow	0.9	0.3
A425 west of Fosse Way	Increased traffic flow	0.9	0.4
Snowford Hill	Increased traffic flow	1.2	0.9

⁸ Department of Transport (1988), *Calculation of Road Traffic Noise*.

4 References

Building Research Establishment (2002), *National Noise Incidence Study, 2000/2001*.

Defra, Noise Mapping England, <http://services.defra.gov.uk/wps/portal/noise/>; accessed 26 July 2013.

Department of Transport (1988), *Calculation of Road Traffic Noise*.